

**A. CLASSIFICATION OF SUBJECT MATTER**  
 IPC 7 F02M59/36 F02M63/02

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)  
 IPC 7 F02M

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	EP 0 481 964 A (NIPPON DENSO CO) 22 April 1992 (1992-04-22) column 7, line 26 - column 8, line 55; figures 1-5,17	1-13
Y	EP 0 957 261 A (LUCAS IND PLC) 17 November 1999 (1999-11-17) column 4, paragraph 22 - column 6, paragraph 29; figures	1-13
Y	US 6 530 363 B1 (BLASS JAMES R ET AL) 11 March 2003 (2003-03-11) abstract; figures	5
A	US 5 957 674 A (KANDA NOBUYUKI ET AL) 28 September 1999 (1999-09-28) figures 2,4	1
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☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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\* & \* document member of the same patent family

Date of the actual completion of the international search

30 September 2004

Date of mailing of the international search report

14/10/2004

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## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2002/040704 A1 (OJIMA KOUICHI ET AL) 11 April 2002 (2002-04-11) page 3, paragraph 33 - page 4, paragraph 38 -----	1

## INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No  
PCT/GB2004/003127

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
EP 0481964	A	22-04-1992	JP 2176158 A	09-07-1990
			JP 2639036 B2	06-08-1997
			JP 2146256 A	05-06-1990
			JP 2639017 B2	06-08-1997
			EP 0481964 A2	22-04-1992
			EP 0516196 A2	02-12-1992
			DE 68910658 D1	16-12-1993
			DE 68910658 T2	17-03-1994
			DE 68922746 D1	22-06-1995
			DE 68922746 T2	05-10-1995
			DE 68925737 D1	28-03-1996
			DE 68925737 T2	22-08-1996
			EP 0375944 A2	04-07-1990
			US 5058553 A	22-10-1991
EP 0957261	A	17-11-1999	EP 0957261 A2	17-11-1999
			US 6651625 B1	25-11-2003
US 6530363	B1	11-03-2003	DE 60004983 D1	09-10-2003
			DE 60004983 T2	15-07-2004
			EP 1171707 A1	16-01-2002
			WO 0063551 A1	26-10-2000
US 5957674	A	28-09-1999	JP 10018941 A	20-01-1998
US 2002040704	A1	11-04-2002	JP 2002115623 A	19-04-2002
			DE 10116450 A1	25-04-2002
			FR 2815086 A1	12-04-2002